

REMARKS/ARGUMENTS:

Claims 3 and 13 are canceled without prejudice. Claims 1, 8, and 14 are amended. Support for the amendment to claim 1 can be found in original claim 3 and at p. 20, lines 23-24 and p. 21, lines 5-6 of Applicant's specification, which states that "the plating layer 5 of the ceramic heater 1 is preferably based on boron." Support for the amendment to claim 8 can be found in original claim 13. Claims 1, 2, 6-12, and 14 are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §102:

Claims 8-12 and 14 stand rejected under 35 U.S.C. §102(b) as being anticipated by EP-0038584. Applicant respectfully traverses this rejection as to amended claim 8-12 and 14.

Claims 8, as amended, includes the limitations of canceled claim 13. At p. 3, of the Office Action the Office states that claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Since amended claim 8 includes all the limitations of claim 13, claim 8 is patentable for at least the same reasons as claim 13. Claims 9-12 and 14 depend from claim 8 and are therefore, patentable for at least the same reasons discussed above. Allowance of claims 8-12 and 14 is thus respectfully requested.

CLAIM REJECTION UNDER 35 U.S.C. §103:

Claims 1-3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over JP2003-317908 (JP'908) in view of JP2003-249545 (JP'545). This rejection is moot with respect to claim 3 due to the cancellation of this claim. Applicant respectfully

traverses this rejection as to amended claims 1 and 2. Claim 1, as amended, is as follows:

A ceramic heater comprising: a ceramic body, a heat generating resistor buried in said ceramic body, an electrode pad that is electrically connected to said heat generating resistor and is formed on the surface of said ceramic body, a boron-based plating layer formed on the surface of said electrode pad having uniform thickness achievable by electroless plating, and a lead member bonded onto said plating layer by means of a brazing material,

wherein content of boron (B) in the surface of said plating layer is 1% by weight or lower.

Applicant respectfully submits that the differences between the subject matter of claim 1 and the cited art are such that the subject matter as a whole would not have been obvious at the time the invention was made to a person of ordinary skill in the art. Applicant submits that the cited art does not teach or suggest a "ceramic heater" according to claim 1 having "a boron-based plating layer formed on the surface of said electrode pad having uniform thickness achievable by electroless plating." Nor has the Office cited any other rationale or provided any other reasoned explanation on which an obviousness rejection may be made.

It is one aspect of the present invention that the plating layer 5 is preferably formed by electroless plating, because the plating layer 5 tends to have uneven thickness when formed by electroplating. In electroplating, the plating layer 5 is formed by applying an electric field to the base material to be plated, which may cause significant variation in thickness due to the current density distribution when the electric field is applied. However, in electroless plating, the plating layer 5 can be formed with uniform thickness. Whether the plating layer 5 is electroless plating or not can be determined by checking the variation in thickness. While

plating materials based on phosphorus (P) or boron (B) are commonly used in electroless plating, a material based on phosphorus is inferior to a material based on boron in heat resistance. Therefore, the plating layer 5 of the ceramic heater 1 is preferably based on boron. (Applicant's specification, at p. 20, line 16-p. 21, line 6).

JP'908 discloses that the glass 31 is deposited on the surface of plating layer 25 and lead member 27 formed on the surface of electrode pad 28 (paragraph [009] of JP'908). According to JP'908, the glass 31 is derived from the ceramic body. JP'908 discloses a ceramic heater having a glass layer in which a maximum diameter of glass grain is not more than 100 μm (claim 1 of JP'908) and a ceramic heater in which an area ratio of glass grain to the electrode pad is not more than 10% (claim 2 of JP'908).

JP'545 discloses boron nitride as a nitride ceramic used for the ceramic substrate (see paragraph [0022] of JP'545). There is no teaching or suggestion in JP'545 of this nitride ceramic being used for the plating layer.

In the present invention, the ceramic heater comprises a boron-based plating layer having uniform thickness achievable by electroless plating. In JP'908 and JP'545, the plating layer is not boron-based. And the plating layer does not have uniform thickness achievable by electroless plating.

In the present invention, boron (B) in the surface of the plating layer is derived from the boron-based plating layer having uniform thickness achievable by electroless plating, whereas in JP'908 and JP'545, the boron (B) is derived from the boron nitride ceramic body.

In light of the foregoing, Applicant respectfully submits that the cited references cannot render claim 1 obvious, because the cited references fail to teach or suggest each and every claim limitation. Claim 2 depends from claim 1 and therefore, cannot be rendered obvious for at least the same reasons as claim 1. Withdrawal of this rejection is thus respectfully requested.

ALLOWABLE SUBJECT MATTER:

Claims 6 and 7 are allowed.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (310) 595-3107 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 07-1896.

Respectfully submitted,

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